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FEBRUARY 4.

Mr. VAUX, Vice-President, in the chair.

Eighteen members present.

The following papers were presented for publication:—

“On the Lingual Dentition of Certain Terrestrial Pulmonata from the United States, with remarks on their systematic value.”  
By THOS. BLAND and WM. G. BINNEY.

“Catalogue of the recent species of the Class Brachiopoda.”  
By W. H. DALL, U. S. C. S.

“Descriptions of Mexican Ichneumonidæ.” By E. T. CRESSON.

*Notice of Remains of Fishes in the Bridger Tertiary Formation of Wyoming.*—Prof. LEIDY remarked that among the multitude of fossils which had been collected from the tertiary clays and sandstones of the Bridger Group of Wyoming, there were comparatively few pertaining to fishes. Nevertheless the remains of these are not unfrequent, but they are not so complete as one might have expected from the nature of the beds containing them. They usually occur as isolated bones, scales and teeth, and mostly indicate fishes related with our living Gars (*Lepidosteus*), and Mud Fish (*Amia*).

Prof. Marsh has already noticed several species of these fishes in the Proceedings of this Academy, 1871, p. 105, from the Bridger beds. Two of the species belong “to the genus *Amia*, about the size of the modern *A. calva*,” the others indicate two species of *Lepidosteus*, “both having smooth scales and about the same size as the modern gar-pike.”

The specimens submitted to our examinations from time to time consist of isolated vertebral centra, ganoid scales, fragments of jaws with teeth, and portions of spines. Many of these appear to indicate the following extinct species previously undescribed:—

LEPIDOSTEUS ATROX. Founded on remains, obtained in Prof. Hayden’s expedition of 1870, at the junction of the Big Sandy and Green Rivers. They indicate a fish larger than the Alligator Gar of the Mississippi. A vertebral centrum from near the middle of the dorsal series is  $8\frac{1}{2}$  lines long. It is flat beneath and ornate with longitudinal and somewhat reticulate wrinkles. The parapophyses are proportionately narrower than in the Alligator Gar. The accompanying scales have their ganoid surface perfectly smooth, flat, and without markings, and they are thicker than in the Alligator Gar.

LEPIDOSTEUS. Another species, indicated by remains accompanying the preceding, was about the size of the Gar pike, *Lepidosteus osseus*, and is probably one of those named by Prof. Marsh. A posterior dorsal has the centrum about  $5\frac{3}{4}$  lines in length, and an accompanying caudal centrum is 5 lines in length. This was likewise provided with smooth flat scales.

LEPIDOSTEUS SIMPLEX. A species approximating in size the Alligator Gar, is indicated by some remains collected by James Stevenson, of Prof. Hayden's party of 1870, near Washakie Station. The articular cup of the basi-occipital bone is five lines high and ten lines wide. The centrum of the atlas is four lines long and ten lines wide. The accompanying scales are flat and smooth.

LEPIDOSTEUS NOTABILIS. Founded on the centrum of an anterior dorsal imbedded in a block of sandstone with casts of fresh-water shells, from near Washakie. The size of the centrum is about equal to a corresponding one of the Alligator Gar, but the parapophyses are proportionately short. The under surface of the centrum is broad, flat, and marked with longitudinal furcate ridges. The sides are perpendicular, and not slanting as in the Alligator Gar. The length of the centrum is 8 lines.

AMIA (PROTAMIA) UINTAENSIS. Indicated by vertebral centra, discovered by Dr. J. Van A. Carter, near Dry Creek Cañon. The fish was proportionately broader in relation with its length than in the living Mud-fish, and was very much larger. The centrum of an anterior dorsal is about double the length, and four times the breadth of the same bone in *Amia calva*. The two ridges at the bottom of the centrum in the latter are substituted by two oval fossæ. The length of the centrum is about  $5\frac{1}{2}$  lines, its height an inch and a quarter, and its breadth an inch and three-quarters.

An atlas, probably belonging to the same species, flat in front and cupped behind, has nearly the same size.

AMIA (PROTAMIA) MEDIA. Indicated by remains from the junction of the Sandy and Green Rivers, collected in Hayden's expedition of 1870. A vertebral centrum from near the forepart of the dorsal series, indicates a species about twice the size of *Amia calva*. A pair of fossæ at the bottom of the centrum substitute the two ridges in the latter. The length of the centrum is  $5\frac{1}{2}$  lines, its height 10 lines, and its breadth 13 lines.

AMIA (PROTAMIA) GRACILIS. A smaller species than *Amia calva*, indicated by a middle dorsal centrum. Its length is 1.18 lines, its height 3.4 lines, and its width 3.8 lines.

HYPAMIA ELEGANS. A related genus to *Amia* is indicated by a vertebral centrum, discovered by Dr. Carter on Dry Creek. The specimen from the middle of the dorsal series, has its sides convergent below in a median prominence excavated into a pair of oval fossæ. The species was rather larger than *A. calva*. The length of the centrum is 2.2 lines, its depth 6.5 lines, and its breadth 7.6 lines.

**PIMELODUS ANTIQUUS.** Indicated by many fragments of pectoral spines and fragments of jaws, found with remains of *Lepidosteus atrox*, etc., at the junction of the Big Sandy and Green Rivers. The size of the species was from a foot to eighteen inches.

**PHAREODUS ACUTUS.** Represented by a number of jaw fragments with teeth found in association with the remains above noticed, at the junction of the Big Sandy and Green Rivers. The dentary bone contains a single closely crowded row of long cylindro-conical teeth, without any small ones behind. The shaft of the teeth is straight and not curved as in *Amia*, but the short conical points are abruptly bent inwardly. The premaxillaries contain a similar row of teeth, but with the points scarcely bent. Nine teeth occupy a space of seven and a half lines in a fragment of a dentary bone, the longest tooth being  $2\frac{1}{2}$  lines. Seven teeth occupy a space of seven lines in a fragment of a premaxillary, the first of the series being 3 lines long.

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FEBRUARY 11.

The President, Dr. RUSCHENBERGER, in the chair.

Thirty-two members present.

Mr. THOMAS MEEHAN presented an apple, which was borne by a tree at Kittaning, in Pennsylvania, and which tree never produced any flowers in the popular acceptation of the term; but always yielded an abundance of fruit. Mr. M. said there was no novelty in this circumstance, as similar cases had been placed on record; but the specimen furnished a practical illustration of some morphological truths which could not often be demonstrated in the way this afforded the opportunity of doing.

It was admitted that a fruit was a branch with its accessory leaves, transformed. The apple fruit was made up of a series of whorls of leaves comprising five each. Cutting an apple through we found a series of five formed the carpels containing the seeds. Several series of whorls, very much retarded in development, probably formed the stamens, but this could not be well seen in the apple fruit, as they seemed to be almost absorbed in the corolla series. This was the next in order that appeared in the divided apple—the green curved fibrous line which we find in all apples midway between the “core” and the “rind” is the dividing line between the series which forms the corolla, and the outer series which forms the calyx. In this tree there are no pistils, the series which usually goes to make up this part of the fruit structure being either very rudimentary or entirely wanting. Hence there was no “core” to the fruit. The result of this want of development was that the usual calyx basin of the apple was in